## IN THE CLAIMS:

Please amend the claims as follows.

1.      (Canceled)

2.      (Previously Presented) The method of claim 5, further comprising generating a visual map of the IT system, the visual map including a depiction of at least one of the discovered components and the at least one dependency between two or more of the discovered components.

3.      (Previously Presented) The method of claim 2, wherein the visual map includes tracked changes to at least one of the discovered components.

4.      (Previously Presented) The method of claim 5, wherein at least one of the discovered components is an application.

5.      (Currently Amended) A method ~~for collecting information on components in an information technology (IT) system,~~ comprising:

creating a plurality of component fingerprints, wherein the plurality of component fingerprints includes a fingerprint for a first component, wherein creating the fingerprint for the first component comprises identifying a plurality of attributes of the first component and selecting one or more, but not all, of the plurality of attributes as the fingerprint for the first component;

automatically discovering the existence of ~~at least one of the~~ a plurality of components in ~~the IT~~ an information technology (IT) system using the plurality of component fingerprints, wherein the discovered components include the first component, wherein automatically discovering the existence of the first component comprises: ~~by:~~

receiving a plurality of event messages indicating a plurality of real-time events that occur in the IT system, wherein each event message matches a respective attribute of the fingerprint for the first component; and

determining that event messages matching every attribute of the fingerprint for the first component have been received;

~~receiving one or more real-time messages corresponding to one or more occurrences in the IT system, wherein the real-time messages include event information relating to one or more components, including a first component;~~

~~comparing at least the first component to one or more fingerprints, wherein each fingerprint corresponds to a known component and includes one or more attributes that are a subset of attributes in a model of the known component; and~~

~~based on said comparing, matching one or more components with one or more fingerprints;~~

wherein the method further comprises:

automatically determining at least one dependency between two or more of the discovered components; and

tracking changes to at least one of the discovered components and the at least one dependency between two or more of the discovered components.

6.      (Currently Amended) The method of claim 5, wherein the plurality of event messages includes a first event message indicating a first real-time event ~~indicated occurrence is~~ selected from the following real-time events: ~~one or more of~~ a file creation, a file deletion, and a file modification.

7.      (Currently Amended) The method of claim 5, wherein the plurality of event messages includes a first event message indicating a first real-time event ~~indicated occurrence is~~ selected from the following real-time events: ~~one or more of~~ a registry key creation, a registry key deletion, and a registry key modification.

8.      (Currently Amended) The method of claim 5, wherein the plurality of event messages includes a first event message indicating ~~indicated occurrence is information regarding~~ detection of a particular element of the first component in the IT system.

9.     (Currently Amended) The method of claim 5, further comprising:

after discovering the existence of the first component, receiving a subsequent event message indicating that an element of the first component was deleted; and

indicating that ~~a particular~~ the first component has been damaged ~~if the indicated occurrence is a deletion and at least one of the attributes of the fingerprint is no longer matched by the components in the IT system~~ in response to the subsequent event message.

10.     (Currently Amended) The method of claim 5, further comprising:

after discovering the existence of the first component, receiving one or more subsequent event messages indicating that one or more elements of the first component were deleted; and

indicating that ~~a particular~~ the first component has been uninstalled ~~if the indicated occurrence is a deletion and all of the attributes of a minimum set of the fingerprint are no longer matched by the components in the IT system~~ in response to the one or more subsequent event messages.

11.     (Previously Presented) The method of claim 5, wherein the at least one dependency is selected from the group consisting of shared library usage, network usage, and containment dependencies.

12.     (Previously Presented) The method of claim 5, further comprising:

generating a component discovered message upon the discovery of one of the components;

retrieving a list of elements to track the discovered component; and using the list of elements to track changes to the discovered component.

13.     (Currently Amended) A computer-readable medium storing program instructions that are computer executable to implement a method comprising:

~~an agent for collecting information on components in an information technology (IT) system, the agent residing on a computer in the IT system, wherein the program instructions are executable to implement:~~

identifying a plurality of attributes of a first component and listing one or more, but not all, of the plurality of attributes in a fingerprint for the first component;

an observer module ~~to detect~~ detecting a plurality of real-time events ~~event information about elements of the computer~~ in an information technology (IT) system, wherein each event matches a respective attribute listed in the fingerprint for the first component; ~~and~~

the observer module sending a respective event message to an analysis module in response to each of the plurality of real-time events;

the analysis module accumulating the event messages and analyzing the event messages in order to determine that events matching every attribute listed in the fingerprint for the first component have occurred in the IT system; and

the analysis module indicating that the first component exists in the IT system in response to said determining that events matching every attribute listed in the fingerprint for the first component have occurred in the IT system.

~~an analysis module to process the real-time event information, the analysis module including: (a) component discovery rules to process real-time event information and match event information with elements of one or more fingerprints of known components using an accumulator to discover one or more components, wherein each fingerprint corresponds to a known component and includes one or more attributes that are a subset of attributes in a model of the known component, and (b) dependency discovery rules to detect relationships between discovered components of the IT system.~~

14.     (Currently Amended) A system ~~for collecting information on components in an information technology (IT) system,~~ comprising:

means for creating a plurality of component fingerprints, wherein the plurality of component fingerprints includes a fingerprint for a first component, wherein creating the fingerprint for the first component comprises identifying a plurality of attributes of the first component and selecting one or more, but not all, of the plurality of attributes as the fingerprint for the first component;

means for automatically discovering the existence of ~~at least one of the~~ a plurality of components in ~~the IT~~ an information technology (IT) system using the plurality of component fingerprints, wherein the discovered components include the first component, wherein automatically discovering the existence of the first component comprises:  ~~by:~~

receiving a plurality of event messages indicating a plurality of real-time events that occur in the IT system, wherein each event message matches a respective attribute of the fingerprint for the first component; and

determining that event messages matching every attribute of the fingerprint for the first component have been received;

~~receiving one or more real-time messages corresponding to one or more occurrences in the IT system, wherein the real-time messages include event information regarding an occurrence in the IT system, the occurrence relating to a first component;~~

~~comparing at least the first component to one or more fingerprints, wherein each fingerprint corresponds to a known component and includes one or more attributes that are a subset of attributes in a model of the known component; and~~

~~based on said comparing, matching one or more components with one or more fingerprints;~~

means for automatically determining at least one dependency between two or more of the discovered components; and

means for tracking changes to at least one of the discovered components and the <u>at least one</u> dependency between two or more of the discovered components.

15.    (Currently Amended) An apparatus ~~for collecting information on components in an information technology (IT) system,~~ comprising:

a memory storing [[a]] program <u>instructions</u>;

a processor in communication with the memory; in which the processor is directed by the program <u>instructions</u> to:

<u>create a plurality of component fingerprints, wherein the plurality of component fingerprints includes a fingerprint for a first component, wherein creating the fingerprint for the first component comprises identifying a plurality of attributes of the first component and selecting one or more, but not all, of the plurality of attributes as the fingerprint for the first component;</u>

<u>automatically</u> discover the existence of ~~at least one of the~~ <u>a plurality of</u> components in ~~the IT~~ <u>an information technology (IT)</u> system <u>using the plurality of component fingerprints, wherein the discovered components include the first component, wherein automatically discovering the existence of the first component comprises:</u> ~~by:~~

<u>receiving a plurality of event messages indicating a plurality of real-time events that occur in the IT system, wherein each event message matches a respective attribute of the fingerprint for the first component; and</u>

<u>determining that event messages matching every attribute of the fingerprint for the first component have been received;</u>

~~receiving one or more real-time messages corresponding to one or more occurrences in the IT system, wherein the real-time messages include event information regarding an occurrence in the IT system, the occurrence relating to a first component;~~

~~comparing at least the first component to one or more fingerprints, wherein each fingerprint corresponds to a known component and includes one or more attributes that are a subset of attributes in a model of the known component; and~~

~~based on said comparing, matching one or more components with one or more fingerprints;~~

<u>automatically</u> determine at least one dependency between two or more of the discovered components; and

track changes to at least one of the discovered components and the <u>at least one</u> dependency between two or more of the discovered components.

16.    (Currently Amended) A method ~~for discovering components in an information technology (IT) system,~~ comprising:

<u>creating a fingerprint for a first component, wherein creating the fingerprint for the first component comprises identifying a plurality of attributes of the first component and selecting one or more, but not all, of the plurality of attributes as the fingerprint for the first component;</u>

<u>creating a subfingerprint for a refinement of the first component, wherein the subfingerprint for the refinement of the first component includes one or more attributes of the refinement of the first component;</u>

<u>automatically discovering the first component in an information technology (IT) system, wherein automatically discovering the first component comprises:</u>

<u>receiving a plurality of event messages indicating a plurality of real-time events that occur in the IT system, wherein each event message matches a respective attribute of the fingerprint for the first component; and</u>

<u>determining that event messages matching every attribute of the fingerprint for the first component have been received;</u>

<u>wherein the method further comprises:</u>

<u>in response to discovering the first component, performing one or more commands to</u>

obtain information regarding the first component; and

automatically discovering the refinement of the first component in the IT system by matching the information regarding the first component to the one or more attributes of the refinement of the first component included in the subfingerprint for the refinement of the first component.

~~receiving event information regarding an occurrence in the IT system, the occurrence relating to a first component;~~

~~comparing at least the first component to at least one fingerprint, wherein the fingerprint includes one or more attributes that are a subset of attributes in a model of a known component; and~~

~~if any of the compared components match substantially all of the attributes of the fingerprint, using a subfingerprint of a refinement of the known component to discover the existence of a second component that corresponds to the refinement of the known component.~~

17.    (Currently Amended) The method of claim 16, wherein the refinement of the ~~known~~ first component is a particular version of the ~~known~~ first component, wherein discovering the refinement of the first component comprises discovering that the particular version of the first component exists in the IT system.

18.    (Currently Amended) The method of claim 16, wherein the refinement of the ~~known~~ first component is an optional piece of the ~~known~~ first component, wherein discovering the refinement of the first component comprises discovering that the optional piece of the first component exists in the IT system.

19-21. (Canceled)

22.    (Currently Amended) The method of claim [[21]] 16, wherein the plurality of event messages include one or more event messages indicating one or more real-time events associated with ~~low-level items are selected from~~ one or more of files, registry settings, and database schemas.

23.    (Currently Amended) A computer-readable medium ~~for discovering components in an information technology (IT) system, the computer-readable medium~~ storing instructions that direct a microprocessor to:

create a fingerprint for a first component, wherein creating the fingerprint for the first component comprises identifying a plurality of attributes of the first component and selecting oen or more, but not all, of the plurality of attributes as the fingerprint for the first component;

create a subfingerprint for a refinement of the first component, wherein the subfingerprint for the refinement of the first component includes one or more attributes of the refinement of the first component;

automatically discover the first component in an information technology (IT) system, wherein automatically discovering the first component comprises:

receiving a plurality of event messages indicating a plurality of real-time events that occur in the IT system, wherein each event message matches a respective attribute of the fingerprint for the first component; and

determining that event messages matching every attribute of the fingerprint for the first component have been received;

in response to discovering the first component, perform one or more commands to obtain information regarding the first component; and

automatically discover the refinement of the first component in the IT system by matching the information regarding the first component to the one or more attributes of the refinement of the first component included in the subfingerprint for the refinement of the first component.

~~receive event information regarding an occurrence in the IT system, the occurrence relating to a first component;~~

~~compare at least the first component to at least one fingerprint, wherein the fingerprint includes one or more attributes that are a subset of attributes in a model of a known component; and~~

if any of the compared components match substantially all of the attributes of the fingerprint, using a subfingerprint of a refinement of the known component to discover the existence of a second component that corresponds to the refinement of the known component.

24.    (Currently Amended) An apparatus ~~for discovering components in an information technology (IT) system,~~ comprising:

a memory storing [[a]] program instructions;

a processor in communication with the memory; in which the processor is directed by the program instructions to:

create a fingerprint for a first component, wherein creating the fingerprint for the first component comprises identifying a plurality of attributes of the first component and selecting one or more, but not all, of the plurality of attributes as the fingerprint for the first component;

create a subfingerprint for a refinement of the first component, wherein the subfingerprint for the refinement of the first component includes one or more attributes of the refinement of the first component;

automatically discover the first component in an information technology (IT) system, wherein automatically discovering the first component comprises:

receiving a plurality of event messages indicating a plurality of real-time events that occur in the IT system, wherein each event message matches a respective attribute of the fingerprint for the first component; and

determining that event messages matching every attribute of the fingerprint for the first component have been received;

in response to discovering the first component, perform one or more commands to obtain information regarding the first component; and

automatically discover the refinement of the first component in the IT system by matching the information regarding the first component to the one or more attributes of the refinement of the first component included in the subfingerprint for the refinement of the first component.

~~receive event information regarding an occurrence in the IT system, the occurrence relating to a first component;~~

~~compare at least the first component to at least one fingerprint, wherein the fingerprint includes one or more attributes that are a subset of attributes in a model of a known component; and~~

~~if any of the compared components match substantially all of the attributes of the fingerprint, using a subfingerprint of a refinement of the known component to discover the existence of a second component that corresponds to the refinement of the known component.~~

25-29. (Canceled)

30.     (Currently Amended) A method for determining dependencies between components in an information technology (IT) system, comprising:

automatically discovering a first component and a second component ~~at least two components~~ in the IT system, wherein automatically discovering the first component comprises automatically discovering that one or more elements of the first component are present in the IT system, wherein automatically discovering the second component comprises automatically discovering that one or more elements of the second component are present in the IT system;

monitoring the usage of resources by the discovered first and second components in the IT system by receiving real-time messages;

~~if a resource is used by one or more of the discovered components, generating a message indicating the use of that resource;~~

~~accumulating each message indicating the use of one of the resources by one of the discovered components;~~

in response to receiving a first real-time message indicating that the first component uses a particular resource, sending a first resource usage message to an accumulator, wherein the first resource usage message indicates that the first component uses the particular resource;

in response to receiving a second real-time message indicating that the second component uses the particular resource, sending a second resource usage message to the accumulator, wherein the second resource usage message indicates that the second component uses the particular resource;

~~if the accumulated messages indicate that at least two of the discovered components use the same resource, then~~ the accumulator indicating that a first dependency between ~~these components has been detected~~ the first component and the second component exists in response to determining that the first and second resource usage messages indicate that the first component and the second component both use the particular resource; and

determining a ~~direction~~ type of the first dependency between the ~~indicated components~~ first component and the second component.

31. (Canceled)

32. (Currently Amended) The method of claim 30, wherein the <u>first</u> component is selected from the group consisting of an application, a network connection endpoint, and a server.

33. (Currently Amended) The method of claim 32,

<u>wherein the particular resource is a particular network port;</u>

wherein ~~at least one~~ <u>the first resource usage</u> message indicates <u>that the first component uses the particular network port and wherein the second resource usage message indicates that the second component uses the particular network port.</u> ~~a network outbound connection by one of the two discovered components.~~

34. (Canceled)

35. (Currently Amended) The method of claim 32,

<u>wherein the particular resource is a particular file;</u>

wherein ~~at least one~~ <u>the first resource usage</u> message indicates <u>that the first component</u> uses ~~a use of a~~ <u>the particular</u> file <u>and wherein the second resource usage message indicates that the second component uses the particular file.</u> ~~by one of the two discovered components.~~

36. (Currently Amended) The method of claim 30, further comprising tracking changes to the first dependency between the ~~two discovered components~~ <u>first component and the second component</u>.

37. (Currently Amended) The method of claim 30, wherein <u>determining the type of the first dependency comprises determining that</u> the first dependency is a containment dependency.

38.    (Currently Amended) The method of claim 30, wherein <u>determining the type of the first dependency comprises determining that</u> the first dependency is a network dependency.

39.    (Currently Amended) The method of claim 30, wherein <u>determining the type of the first dependency comprises determining that</u> the first dependency is a shared usage dependency.

40.    (Currently Amended) An apparatus ~~for determining dependencies between components in an information technology (IT) system,~~ comprising:

a memory storing [[a]] program <u>instructions</u>;

a processor in communication with the memory; in which the processor is directed by the program <u>instructions</u> to <u>implement a method comprising</u>:

automatically ~~discover~~ <u>discovering a first component and a second component</u> ~~at least two components~~ in <u>an information technology (IT)</u> ~~the IT~~ system<u>, wherein automatically discovering the first component comprises automatically discovering that one or more elements of the first component are present in the IT system, wherein automatically discovering the second component comprises automatically discovering that one or more elements of the second component are present in the IT system</u>;

monitor the usage of resources by the discovered <u>first and second</u> components in the IT system by receiving real-time messages;

~~if a resource is used by one or more of the discovered components, generating a message indicating the use of that resource;~~

~~accumulate each message indicating the use of one of the resources by one of the two components;~~

<u>in response to receiving a first real-time message indicating that the first component uses a particular resource, sending a first resource usage message to an accumulator, wherein the first resource usage message indicates that the first component uses the particular resource;</u>

in response to receiving a second real-time message indicating that the second component uses the particular resource, sending a second resource usage message to the accumulator, wherein the second resource usage message indicates that the second component uses the particular resource;

~~if the accumulated messages indicate that at least two of the discovered components use the same resource, then~~ the accumulator indicating that a first dependency between ~~these components has been detected~~ the first component and the second component exists in response to determining that the first and second resource usage messages indicate that the first component and the second component both use the particular resource; and

~~determine~~ determining a ~~direction~~ type of the dependency between the ~~indicated components~~ first component and the second component.

41-44. (Canceled)